FCC Rule 1.1307
NEPA Screening
Bremo Bluff Tower
Bremo Bluff, Fluvanna County, Virginia

EEE Project Number 16-041

Prepared for:

Dominion℠

707 East Main Street
Richmond, VA 23219

Prepared by

3e EEE Consulting, Inc.
Environmental, Engineering and Educational Solutions

8525 Bell Creek Road
Mechanicsville, Virginia 23116
(804)442-3330

May 2016

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NEPA Screening Checklist

Client: Dominion **Site Name:** Bremo Bluff Tower	**EEE# 16-041**	**Location:** Bremo Bluff, Fluvanna County, Virginia	
	Check either the left box below if positive, or the right box below if negative.		
NEPA Threshold	**Reference**	Positive	Negative
1. Wilderness Area Is the proposed facility located in an officially designated wilderness area?	US Forest Service Wilderness Areas dataset, Bureau of Land Management Wilderness Areas and Wilderness Study Areas datasets, and National Park Service Wilderness Preservation System Areas dataset		x
2. Wildlife preserve Is the proposed facility located in an officially designated wildlife preserve?	US Fish and Wildlife Service (USFWS) Refuge Locator map and Virginia Department of Game and Inland Fisheries (DGIF) Wildlife Environmental Review Map Service		x
3. Threatened and Endangered Species Will the proposed facility likely affect threatened or endangered species or designated critical habitats?	USFWS's Information, Planning, and Conservation System (IPaC) and DGIF's Fish and Wildlife Information Service (VAFWIS)		x
4. Threatened and Endangered Species Will the proposed facility likely jeopardize the continued existence of any proposed or endangered species?	USFWS's IPaC and DGIF's VAFWIS		x
5. Critical habitat Will the proposed facility likely result in the destruction or adverse modification of proposed critical habitats (as determined by the Endangered Species Act of 1973)?	USFWS's IPaC		x
6. National Register of Historic Places Will the facility affect districts, sites, buildings, structures, or objects, significant in American history, architecture, archeology, engineering or culture, that are listed (or eligible for listing) in the National Register of Historic Places?			
7. Indian Religious **Will the facility affect Indian religious site(s)?**	Advisory Council on Historic Preservation guidance and regulations		x
8. Floodplain Is the facility located in a flood plain?	the site is located outside the floodplain (VBMP 2013 Imagery), National Flood Hazard Database Layer		x
9. Surface Features Will the construction of the proposed facility involve significant change in surface features (e.g., wetland fill, deforestation or water diversion)?	field visit and mapping – the site has been disturbed and is currently a 0.22 acre deteriorating basketball court; no Waters of the United States were observed during the site visit, and none are shown on Fluvanna County online mapping or National Hydrography Dataset mapping		x

10. High Intensity White Lights Will the proposed facility be located in a residential neighborhood as defined by local zoning law and equipped with high intensity white lights?	this site is zoned as an agricultural district, not residential (Fluvanna County online zoning map)		x
11. Facility Power Will the proposed NON-ROOFTOP facility equal or exceed total power (of all channels) of 2000 watts ERP for Broadband PCS or 1000 watts for Narrowband PCS and have antennas located less than 10 meters above ground level?	N/A - this pertains to cell towers, and this will be a microwave tower		x
The undersigned has reviewed and approved the completion of this NEPA checklist for the above reference site.			

Signed: Susan L Liszeski

Title: Senior Environmental Scientist

Date: 23 May 2016 Print Name: Susan L. Liszeski

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1.0 INTRODUCTION

The National Environmental Policy Act (NEPA) of 1969, as amended, established a national goal of protecting the environment. NEPA requirements apply to any action taken by a federal agency, funded by a federal agency, or occurring on federal land. Specifically, NEPA and the regulatory guidelines established by the Council on Environmental Quality (CEQ), which implemented the Act (Title 40 of the Code of Federal Regulations [CFR] §§ 1500 et seq.), require all Federal agencies to consider environmental consequences when making decisions or implementing projects which could be deemed "major federal actions."

The Federal Communication Commission (FCC) is a licensing agency. The FCC complies with NEPA by requiring its licensees to review their proposed actions for potential environmental consequences. The FCC's rules for implementing NEPA are found in 47 CFR, Part 1, Subpart I, rule sections 1.1301 to 1.1319.

Section 1.1307 of these rules lists eight categories of facilities that may have significant effects on environmental or cultural resources. If, after assessing the potential impacts of a proposed facility, the FCC determines there is the potential for significant impacts on environmental or cultural resources, an Environmental Assessment should be prepared to fully address these impacts. If no resources would be significantly impacted by the proposed facility, compliance with NEPA is satisfied. Pursuant to Section 1.1307, these facilities are as follows:

(1) Facilities that are to be located in an officially designated wilderness area.
(2) Facilities that are to be located in an officially designated wildlife preserve.
(3) Facilities that: (i) May affect listed threatened or endangered species or designated critical habitats; or (ii) are likely to jeopardize the continued existence of any proposed endangered or threatened species or likely to result in the destruction or adverse modification of proposed critical habitats, as determined by the Secretary of the Interior pursuant to the Endangered Species Act of 1973.
(4) Facilities that may affect districts, sites, buildings, structures or objects, significant in American history, architecture, archeology, engineering or culture, that are listed, or are eligible for listing, in the National Register of Historic Places.
(5) Facilities that may affect Indian religious sites.
(6) Facilities to be located in a floodplain
(7) Facilities whose construction will involve significant change in surface features (e.g., wetland fill, deforestation or water diversion).

(8) Antenna towers and/or supporting structures that are to be equipped with high intensity white lights which are to be located in residential neighbor-hoods, as defined by the applicable zoning law.

2.0 ENVIRONMENTAL SCREENING

EEE Consulting, Inc. (EEE) was retained by Dominion Resources, Inc. (Dominion) to prepare this environmental screening to determine if installation of a proposed microwave tower at the Bremo Power Station in Fluvanna County, Virginia, would have a potential significant impact on any of the eight environmental or cultural resources listed in Section 1.1307 of the FCC's rules implementing NEPA. The proposed tower would be a 395-foot tall self-supporting lattice communications tower with an equipment shelter compound. It would replace an existing 335-foot tall guyed tower approximately 0.25 miles southeast of the proposed site. All existing wireless systems at the Bremo Power Station would be transferred to the new structure.

The tower site is situated at Dominion's Bremo Power Station. Construction of the new tower would disturb an approximately 0.15-acre basketball court that is currently in disrepair. The Bremo Power Station encompasses approximately 240 acres and is located on Bremo Road (State Route 656) in Bremo Bluff, Fluvanna County, Virginia. See **Appendix A** for a project location map, an aerial photograph, and a topographic map. **Appendix B** contains project plans.

EEE searched existing databases and literature to determine potential environmental impacts of the proposed microwave tower. In addition, EEE conducted a 15 March 2016 site visit to look for potential environmental concerns. Finally, EEE evaluated the need for the project to undergo coordination with the Virginia State Historic Preservation Office and interested Tribal Historic Preservation Offices under Section 106 of the National Historic Preservation Act (NHPA).

2.1 Wilderness Areas

To determine potential environmental impacts of the facility on officially designated wilderness areas, EEE evaluated information from the following sources:

- US Forest Service - Wilderness Areas dataset
- Bureau of Land Management - Wilderness Area and Wilderness Study Areas datasets
- National Park Service - Wilderness Preservation System Areas dataset

Based on a review of these data, the facility is not located in or adjacent to an officially designated wilderness area.

2.2 Wildlife Preserves

To determine potential environmental impacts of the facility on officially designated wildlife preserves, EEE evaluated information from the following sources:

- US Fish and Wildlife Service (USFWS) - Wildlife Refuge Locator map
- Virginia Department of Game and Inland Fisheries (VDGIF) - Wildlife Environmental Review Map Service

Based on a review of these data, the facility is not located in or adjacent to an officially designated wildlife preserve.

2.3 Threatened and Endangered Species & Critical Habitat

EEE assessed the potential environmental impacts of the facility on species with federal or state protection. This includes those that are listed or proposed for listing as threatened or endangered species and designated critical habitats. EEE evaluated information from the following sources:

- USFWS - Information, Planning, and Conservation System (IPaC)
- VDGIF - Virginia Fish and Wildlife Information System (VAFWIS)
- Virginia Department of Conservation and Recreation (DCR) – Division of Natural Heritage Project Review

Based on a review of these databases, the proposed facility would not impact a listed or proposed threatened or endangered species or their designated critical habitats. The DCR Natural Heritage Review identified one landscape worthy of protection and stewardship action because of the natural heritage resources and habitat they support. Appropriate erosion and sedimentation controls (ESCs) would protect the James River - Bremo Stream Conservation Unit approximately 1.7 miles from the proposed project site. ESCs would also protect the three state-protected species that, according to VAFWIS, have been confirmed within two miles of the project site. IPaC identified only the northern long-eared bat (*Myotis septentrionalis*) as being in the vicinity of the proposed tower. Since no trees would be removed, this project would not effect the bat.

Based on the above information, this project would not impact threatened or endangered species. Refer to **Appendix C** for supporting documentation on this resource.

2.4 Cultural Resources

The *Nationwide Programmatic Agreement for Review of Effects on Historic Properties for Certain Undertakings Approved by the Federal Communications Commission* establishes the Area of Potential Effect (APE) for communications facilities. Under the programmatic agreement (PA), the APE for towers between 200 and 400 feet tall, such as the proposed facility, is 0.75 miles. The PA states that only those properties which are listed in the National Register of Historic Places (NRHP), or previously determined eligible for listing, need to be evaluated. The APE for archaeological resources is limited to the area of ground disturbance.

There are no archaeological resources within the proposed limits of disturbance. Three architectural resources fall within the 0.75-mile APE. The VEPCO Power Plant is one of the listed resources. Since the proposed tower would be a part of the plant and the plant is an industrial facility, the new tower is not out of character with this resource. During the 15 March 2016 site reconnaissance, EEE visited the remaining architectural resources, Spring Garden and Spring Garden Slave House. Due to the heavily wooded nature of the area surrounding the proposed tower site, the tower is unlikely to be visible from either architectural resource. Therefore, it is concluded that the project would not have a significant impact on any historic resources. Refer to **Appendix D** for supporting documentation for this resource.

2.5 Indian Religious Sites

According to the Advisory Council on Historic Preservation's (ACHP) *Consultation with Indian Tribes in the Section 106 Review Process: A Handbook*, "Section 106 of the NHPA requires federal agencies to take into account the effects of their undertakings on historic properties and provide the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment on those undertakings. The ACHP has issued the regulations implementing Section 106 (Section 106 regulations), 36 CFR Part 800, 'Protection of Historic Properties.' The NHPA requires that, in carrying out the Section 106 review process, federal agency must consult with any Indian tribe that attaches religious and cultural significance to historic properties that may be affected by the agency's undertakings."

EEE coordinated with all tribes identified through the Tower Construction Notification System process. Letters were sent to the Catawba Indian Nation, the Cherokee Nation, the Delaware Nation, the Eastern Shawnee Tribe of Oklahoma, and the Shawnee Tribe. The Catawba Indian Nation and the Cherokee Nation both responded that they had no cultural concerns related to the project. The remaining tribes have not provided comments.

Based on the information above, it is concluded that the project would not have a significant adverse impact on any Indian Religious sites.

2.6 Floodplains

To determine potential environmental impacts of the facility on 100-year and 500-year floodplains, EEE evaluated the Federal Emergency Management Agency (FEMA) Map for Fluvanna County, Virginia (All Jurisdictions), Panel ID Number 51065C0260C. Based on the review of this map, the proposed facility is located outside both the 100-year and 500-year floodplain. Therefore, this project would not have a significant impact on floodplains. Refer to **Appendix E** for supporting documentation on this resource.

2.7 Surface Features

To determine potential environmental impacts of the facility on surface features, including jurisdictional wetlands and streams, deforestation, and water diversion, EEE evaluated the following information:

- National Wetlands Inventory (NWI) map
- Natural Resources Conservation Service (NRCS) Soil Survey map

Based on a review of these data and EEE's site visit, the facility would not significantly impact surface features. Unnamed tributaries to Holman Creek and the James River are located to the north and to the southeast of the proposed tower site, respectively, but would not be impacted by the project. According to the NWI map there are small freshwater emergent wetlands to the northeast and southeast of the tower site, but they would also be unaffected by the project. No deforestation would occur as a result of this project. Refer to **Appendix F** for supporting documentation on this resource.

2.8 High Intensity White Lighting

The proposed tower will be located within a power station operated by Dominion, on land zoned as an agricultural district. The land is not dedicated to residential use. In addition, high intensity white lighting would not be used on the proposed tower. Therefore, lighting for the facility would not have a significant impact on residential neighborhoods.

2.9 Facility Power

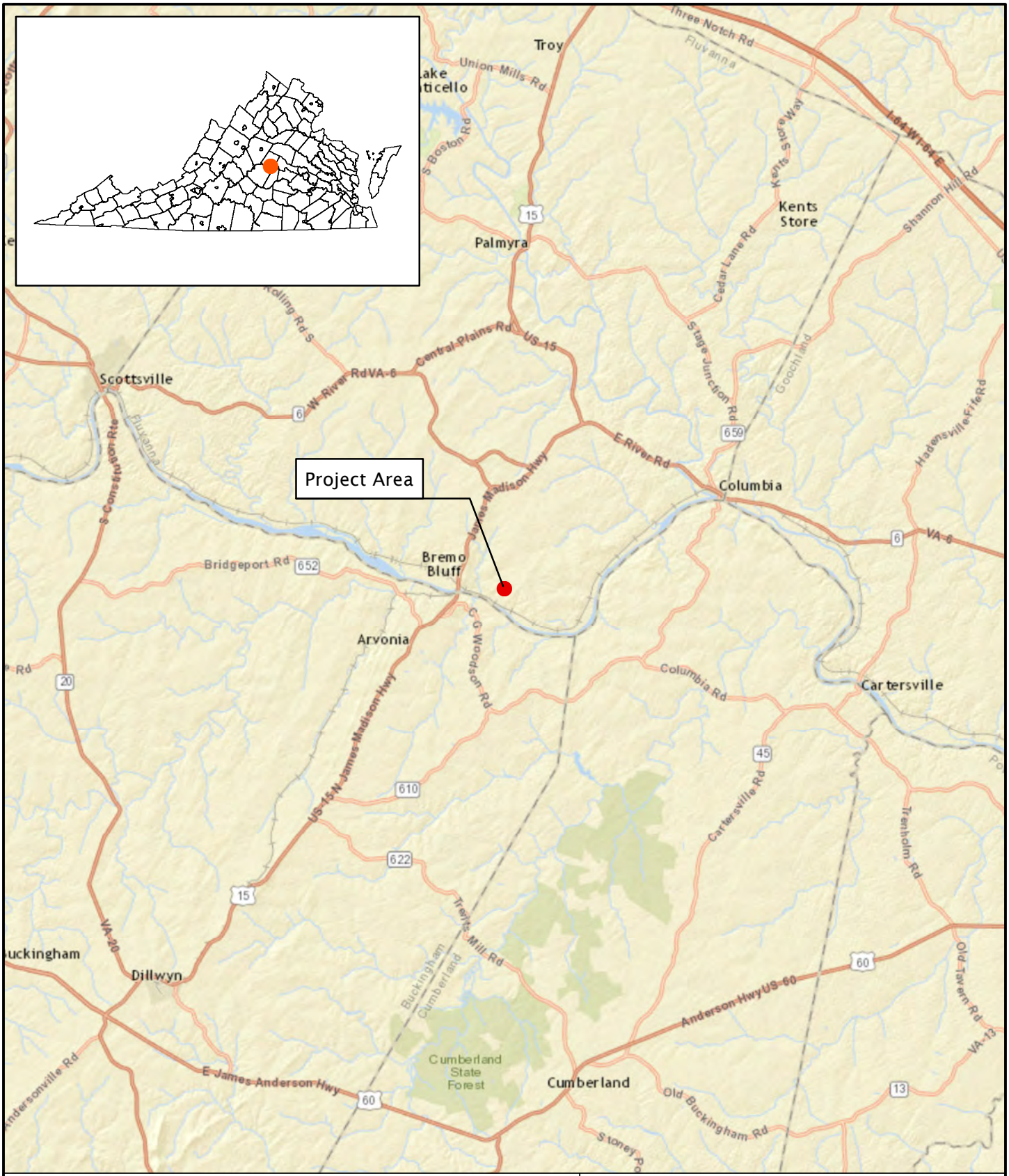
Based on information provided by Dominion, the proposed facility is a microwave tower, not a cellular phone tower. Dominion has no Broadband PCS carriers collocated on the existing tower

and there are no plans to allow PCS on the new structure. Therefore, there would be no concerns with facility power when the new tower is built.

3.0 CONCLUSION

Based on a site visit and a review of publicly available data and literature, the facility would not have a significant environmental impact on any of the environmental or cultural resources identified under Section 1.1307. Therefore, the proposed construction and operation of the switching station tower would be compliant with the requirements of NEPA.

APPENDIX A – PROJECT LOCATION MAPS



3e EEE Consulting, Inc.
Environmental, Engineering and Educational Solutions

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FIGURE 1
PROJECT LOCATION
DOMINION BREMO BLUFF TOWER

0 5 10
Miles

Fluvanna County, Virginia
Source: ESRI World Street Map
Prepared by JK, April 2016
EEE Project No. 16-041

Projection: NAD 1983 StatePlane Virginia South FIPS 4502 Feet

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Environmental, Engineering and Educational Solutions

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FIGURE 2
USGS TOPOGRAPHIC MAP
DOMINION BREMO BLUFF TOWER

0 0.5 1
Miles

Fluvanna County, Virginia
Source: ESRI World Street Map
Prepared by JK, April 2016
EEE Project No. 16-041

Projection: NAD 1983 StatePlane Virginia South FIPS 4502 Feet

3e EEE Consulting, Inc.
Environmental, Engineering and Educational Solutions

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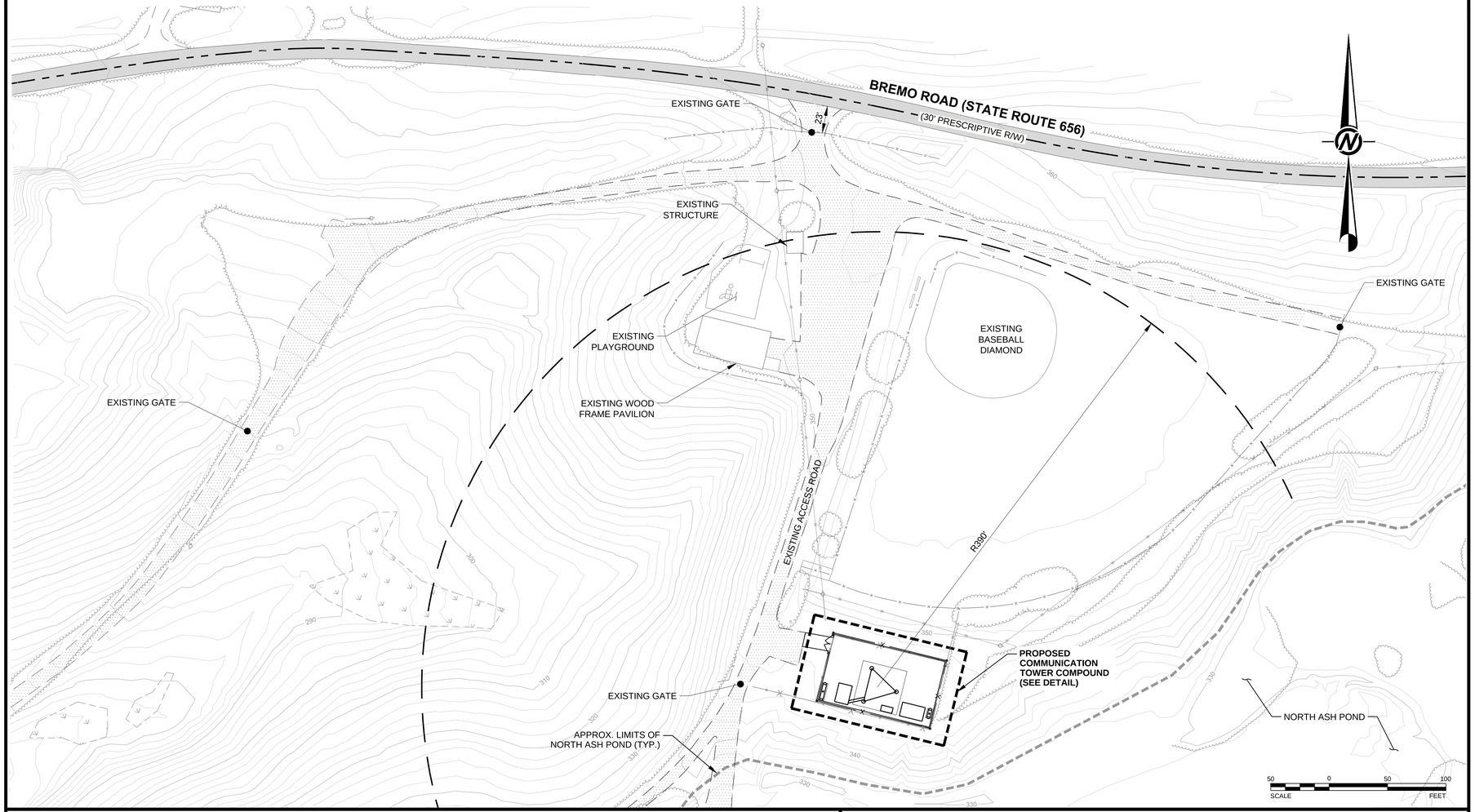
FIGURE 3
AERIAL PHOTOGRAPH
DOMINION BREMO BLUFF TOWER

0 0.5 1
Miles

Fluvanna County, Virginia
Source: ESRI Aerial 2014
Prepared by JK, April 2016
EEE Project No. 16-041

Projection: NAD 1983 StatePlane Virginia South FIPS 4502 Feet

APPENDIX B – PROJECT PLANS



LEGEND

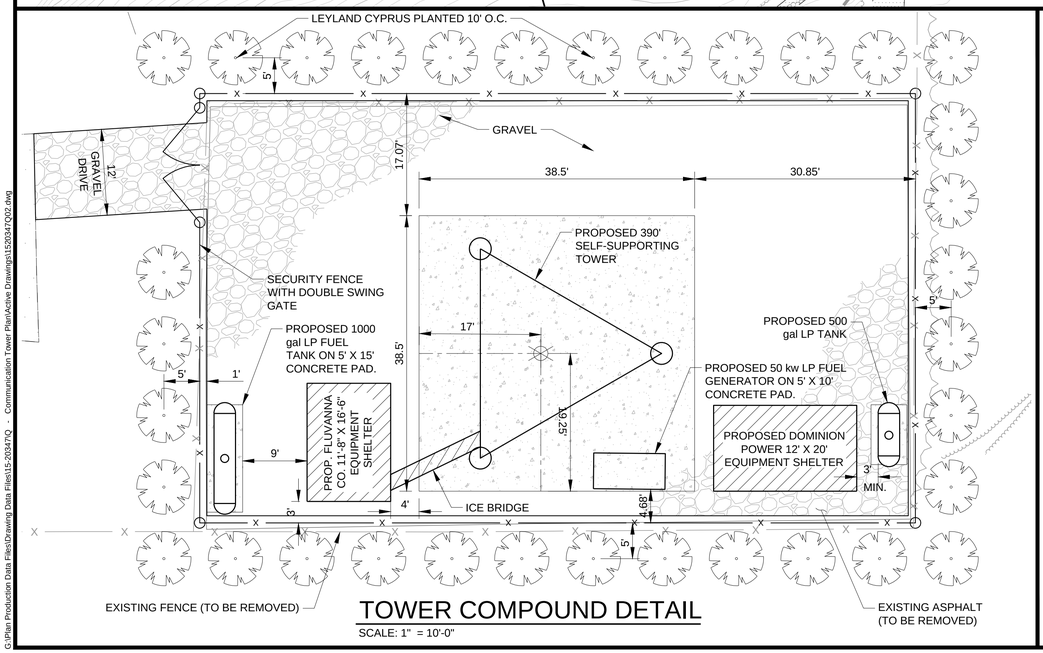
- PROPERTY BOUNDARY
- APPROXIMATE LIMITS OF NORTH ASH POND
- EXISTING TOPOGRAPHIC CONTOURS (2' INTERVALS)
- EXISTING TREE LINE
- EXISTING FENCE
- EXISTING OVERHEAD UTILITY LINE

GENERAL NOTES

1. EXISTING CONDITIONS COMPILED FROM:
   a. AERIAL TOPOGRAPHIC SURVEY PREPARED BY McKENZIE SNYDER, INC., DATE OF AERIAL PHOTO: 1/16/15 [CONTROL PREPARED BY H&B SURVEYING & MAPPING (H&B)]
   b. BOUNDARY SURVEY PREPARED BY H&B SURVEYING AND MAPPING, LLC DATED 04/27/15.
2. SITE DATUM: NAD83 / NAVD88
3. WETLAND DELINEATION BY DOMINION ENVIRONMENTAL SERVICES ON 01/30/15 & 02/05/15 AND BY GOLDER ASSOCIATES ON 03/16/15 & 03/25/15. WATERS OF THE U.S. CONFIRMED BY THE USACE DURING JUNE 4, 2015 SITE VISIT.
4. 100 YEAR FLOOD PLAIN DELINEATION BASED ON FLOOD ELEVATION DATA REPRESENTED ON FEMA FLOOD INSURANCE RATE MAP (FIRM), MAP NUMBER 51065C0260C, EFFECTIVE DATE: 05/16/2008.
5. ADJACENT PARCELS ARE ZONED A-1 WITH THE EXCEPTION OF THE TWO NOTED PARCELS AT THE NORTH WEST CORNER OF THE PROPERTY BOUNDARY.
6. GENERATOR TESTING SHALL OCCUR ONLY BETWEEN 9:00 AM AND 4:00 PM MONDAY THROUGH FRIDAY.

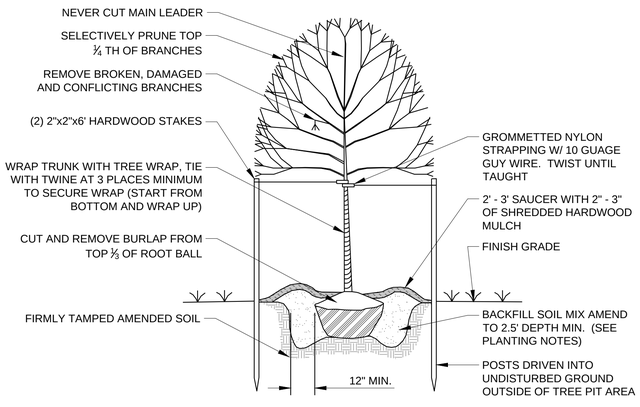
PLANTING NOTES

1. ALL PLANTS SHALL BE HEALTHY, VIGOROUS MATERIAL FREE OF PESTS AND DISEASE AT THE TIME OF PLANTING.
2. ALL PLANTS SHALL BE CONTAINER-GROWN OR BALLED AND BURLAPPED.
3. ALL PLANTS AND STAKED LOCATIONS ARE SUBJECT TO THE APPROVAL OF THE VERIZON CONSTRUCTION MANAGER BEFORE, DURING AND AFTER INSTALLATION.
4. ALL PLANTS AND PLANTING AREAS SHALL BE COMPLETELY MULCHED AS SPECIFIED ON THE DETAIL.
5. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES AND SHALL AVOID DAMAGE TO ALL UTILITIES DURING THE COURSE OF THE WORK.
6. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL PLANTING, PLANTING AREAS AND LAWNS UNTIL THE WORK IS ACCEPTED IN TOTAL BY THE VERIZON CONSTRUCTION MANAGER.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CARE AND MAINTENANCE OF PLANTS FOR A PERIOD OF THREE YEARS FOLLOWING PLANTING, AND THE REPLACEMENT OF ANY DEAD, DYING OR DISEASED VEGETATION REQUIRED TO BE INSTALLED BY THE VERIZON CONSTRUCTION MANAGER FOR THE LIFE OF THE PROJECT.



TOWER COMPOUND DETAIL

SCALE: 1" = 10'-0"



BALLED OR BURLAPPED TREE PLANTING DETAIL

NOT TO SCALE

NOTE: FOR TREES LESS THAN 2 ½ " CALIPER

Golder Associates

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	R/W

DRAFT

PROJECT

DOMINION
BREMO POWER STATION
COMMUNICATION TOWER
RELOCATION
FLUVANNA COUNTY, VIRGINIA

TITLE

SITE PLAN

PROJECT No.		1520347
FILE No.		1520347Q02
REV. 0	SCALE	AS SHOWN
DESIGN	ATN	03/15/2016
CADD	KLL	01/19/2016
CHECK		
REVIEW		

FIGURE 1

G:\Plan Production Data Files\Drawing Data Files\15-2034\7Q - Communication Tower Plan\Active Drawings\1520347Q02.dwg

APPENDIX C – THREATENED AND ENDANGERED SPECIES

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Virginia Ecological Services Field Office
6669 SHORT LANE
GLOUCESTER, VA 23061
PHONE: (804)693-6694 FAX: (804)693-9032
URL: www.fws.gov/northeast/virginiafield/

Consultation Code: 05E2VA00-2016-SLI-2706 May 20, 2016
Event Code: 05E2VA00-2016-E-03239
Project Name: Dominion Bremo Bluff Tower

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*). Any activity proposed on National Wildlife Refuge lands must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and

endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment

United States Department of Interior
Fish and Wildlife Service

Project name: Dominion Bremo Bluff Tower

Official Species List

Provided by:

Virginia Ecological Services Field Office
6669 SHORT LANE
GLOUCESTER, VA 23061
(804) 693-6694
http://www.fws.gov/northeast/virginiafield/

Consultation Code: 05E2VA00-2016-SLI-2706
Event Code: 05E2VA00-2016-E-03239

Project Type: COMMUNICATIONS TOWER

Project Name: Dominion Bremo Bluff Tower
Project Description: Dominion proposes to construct a 390-foot self-supporting communications tower at the Bremo Power Station in Fluvanna County, Virginia. A 5' antenna will be placed on top of the tower, bringing the total height of the structure to 395'. The tower will replace an existing 335-foot guyed tower.

Please Note: The FWS office may have modified the Project Name and/or Project Description, so it may be different from what was submitted in your previous request. If the Consultation Code matches, the FWS considers this to be the same project. Contact the office in the 'Provided by' section of your previous Official Species list if you have any questions or concerns.

Project Location Map:

Project Coordinates: MULTIPOLYGON (((-78.27708191543425 37.71165464977148, -78.27713575841717 37.711485298939685, -78.27748939603354 37.71156685652781, -78.27742832920272 37.711720788639305, -78.27708191543425 37.71165464977148)))

Project Counties: Fluvanna, VA

Endangered Species Act Species List

There are a total of 1 threatened or endangered species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Critical habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats within your project area** section further below for critical habitat that lies within your project. Please contact the designated FWS office if you have questions.

Mammals	Status	Has Critical Habitat	Condition(s)
Northern long-eared Bat *(Myotis septentrionalis)*	Threatened		

Critical habitats that lie within your project area

There are no critical habitats within your project area.

Appendix A: FWS National Wildlife Refuges and Fish Hatcheries

There are no refuges or fish hatcheries within your project area.

Site Location

37,42,41.7 -78,16,38.0
is **the Search Point**

Show Position Rings
(•) Yes ( ) No
1/2 mile and 1/8 mile at the **Search Point**

Show Search Area
(•) Yes ( ) No
2 Search distance miles radius

Search Point is at map center

Base Map Choices
Topography

Map Overlay Choices
Current List: Position, Search, BECAR, BAEANests, TEWaters, TierII, Habitat, Trout, Anadromous

Map Overlay Legend

T & E Waters
Federal
State

Predicted Habitat WAP Tier I & II
Aquatic
Terrestrial

Trout Waters
Class I - IV
Class V - VI

Anadromous Fish Reach
Confirmed
Potential

Impediment

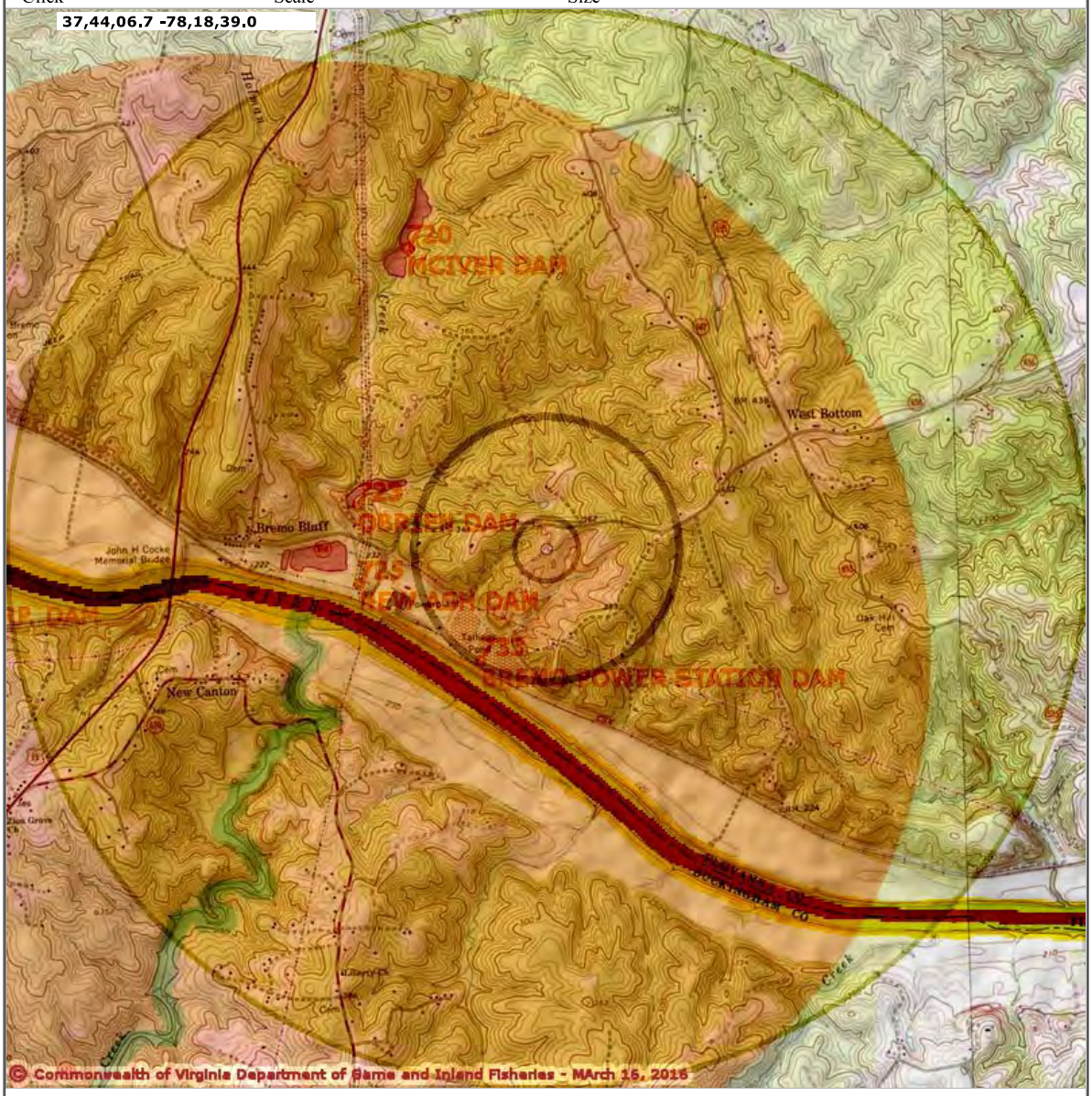
Position Rings 1/2 mile and 1/8 mile at the Search Point

2 mile radius Search Area

Bald Eagle Concentration Areas and Roosts

back | Refresh Browser Page | Help

Map Click: Pan | Id | M
Map Scale: In | Zoom | Out
Screen Size: Small | Size | Big



N

500 0 500 1000 1500 2000 Meters
2000 0 2000 4000 6000 8000 Feet

Point of Search 37,42,41.7 -78,16,38.0
Map Location 37,42,41.7 -78,16,38.0

Select **Coordinate System:**
(•) Degrees,Minutes,Seconds Latitude - Longitude
( ) Decimal Degrees Latitude - Longitude
( ) Meters UTM NAD83 East North Zone
( ) Meters UTM NAD27 East North Zone

Base Map source: Topographic maps from TOPO! copyright 2006 (see National Geographic Maps for details)

Map projection is UTM Zone 17 NAD 1983 with left 736809 and top 4180505. Pixel size is 8 meters . Coordinates displayed are Degrees, Minutes, Seconds North and West. Map is currently displayed as 800 columns by 800 rows for a total of 640000 pixles. The map display represents

6400 meters east to west by 6400 meters north to south for a total of 40.9 square kilometers. The map display represents 21000 feet east to west by 21000 feet north to south for a total of 15.8 square miles.

Topographic maps and Black and white aerial photography for year 1990+-
are from the United States Department of the Interior, United States Geological Survey.
Color aerial photography aquired 2002 is from Virginia Base Mapping Program, Virginia Geographic Information Network.
Shaded topographic maps are from TOPO! ©2006 National Geographic
http://www.national.geographic.com/topo
All other map products are from the Commonwealth of Virginia Department of Game and Inland Fisheries.

map assembled 2016-03-16 09:56:34 (qa/qc December 5, 2012 8:04 - tn=715666.0 dist=3218.688 I)
$poi=37.7115833 -78.2772222

VaFWIS Initial Project Assessment Report Compiled on 3/8/2016, 11:22:40 AM

Help

Known or likely to occur within a 2 mile radius around point 37,42,41.8 -78,16,37.8 in 029 Buckingham County, 065 Fluvanna County, VA

View Map of Site Location

416 Known or Likely Species ordered by Status Concern for Conservation (displaying first 20) (20 species with Status* or Tier I** or Tier II**)

BOVA Code	Status*	Tier**	Common Name	Scientific Name	Confirmed	Database(s)
060017	FESE	I	Spinymussel, James	Pleurobema collina		BOVA
050022	FT		Bat, northern long-eared	Myotis septentrionalis		BOVA
060006	SE	II	Floater, brook	Alasmidonta varicosa	Yes	BOVA,TEWaters,Habitat
040129	ST	I	Sandpiper, upland	Bartramia longicauda		BOVA
040293	ST	I	Shrike, loggerhead	Lanius ludovicianus		BOVA
060081	ST	II	Floater, green	Lasmigona subviridis	Yes	BOVA,TEWaters,Habitat,SppObs
060173	FSST	II	Pigtoe, Atlantic	Fusconaia masoni	Yes	BOVA,TEWaters,Habitat
040292	ST		Shrike, migrant loggerhead	Lanius ludovicianus migrans		BOVA
040093	FS	II	Eagle, bald	Haliaeetus leucocephalus		BOVA
060029	FS	III	Lance, yellow	Elliptio lanceolata		BOVA
030063	CC	III	Turtle, spotted	Clemmys guttata		BOVA
030012	CC	IV	Rattlesnake, timber	Crotalus horridus		BOVA
040225		I	Sapsucker, yellow-bellied	Sphyrapicus varius		BOVA
040319		I	Warbler, black-throated	Setophaga virens		BOVA

			green			
060084		I	Pigtoe, Virginia	Lexingtonia subplana		BOVA
020023		II	Salamander, mole	Ambystoma talpoideum		BOVA
040052		II	Duck, American black	Anas rubripes		BOVA
040105		II	Rail, king	Rallus elegans		BOVA
040320		II	Warbler, cerulean	Setophaga cerulea		BOVA
040266		II	Wren, winter	Troglodytes troglodytes		BOVA

To view All 416 species View 416

* FE=Federal Endangered; FT=Federal Threatened; SE=State Endangered; ST=State Threatened; FC=Federal Candidate; FS=Federal Species of Concern; CC=Collection Concern

** I=VA Wildlife Action Plan - Tier I - Critical Conservation Need;
II=VA Wildlife Action Plan - Tier II - Very High Conservation Need;
III=VA Wildlife Action Plan - Tier III - High Conservation Need;
IV=VA Wildlife Action Plan - Tier IV - Moderate Conservation Need

Bat Colonies or Hibernacula: Not Known

Anadromous Fish Use Streams (1 records)

View Map of All Anadromous Fish Use Streams

Stream ID	Stream Name	Reach Status	Anadromous Fish Species			View Map
			Different Species	Highest TE*	Highest Tier**	
P189	James River 4	Potential	0			Yes

Impediments to Fish Passage (4 records)

View Map of All Fish Impediments

ID	Name	River	View Map
733	BREMO POWER STATION DAM	JAMES RIVER	Yes
720	MCIVER DAM	SPRING GARDEN CREEK	Yes
725	NEW ASH DAM	SPRING GARDEN CREEK	Yes
723	OBRIEN DAM	TR-HOLMAN CREEK	Yes

Colonial Water Bird Survey

N/A

Threatened and Endangered Waters (2 Reaches)

View Map of All
Threatened and Endangered Waters

Stream Name	T&E Waters Species						View Map
	Highest TE*	BOVA Code, Status*, Tier**, Common & Scientific Name					
James River (02080203)	FSSE	060006	SE	II	Floater, brook	Alasmidonta varicosa	Yes
		060081	ST	II	Floater, green	Lasmigona subviridis	
		060173	FSST	II	Pigtoe, Atlantic	Fusconaia masoni	
James River (02080203)	ST	060081	ST	II	Floater, green	Lasmigona subviridis	Yes

Managed Trout Streams

N/A

Bald Eagle Concentration Areas and Roosts

N/A

Bald Eagle Nests

N/A

Habitat Predicted for Aquatic WAP Tier I & II Species (4 Reaches)

View Map Combined Reaches from Below of Habitat Predicted for WAP Tier I & II Aquatic Species

Stream Name	Tier Species						View Map
	Highest TE*	BOVA Code, Status*, Tier**, Common & Scientific Name					
James River (20802031)	FSSE	060006	SE	II	Floater, brook	Alasmidonta varicosa	Yes
		060081	ST	II	Floater, green	Lasmigona subviridis	

		060173	FSST	II	Pigtoe, Atlantic	Fusconaia masoni	
James River (20802032)	FSSE	060006	SE	II	Floater, brook	Alasmidonta varicosa	Yes
		060081	ST	II	Floater, green	Lasmigona subviridis	
		060173	FSST	II	Pigtoe, Atlantic	Fusconaia masoni	
James River (20802031)	FSST	060081	ST	II	Floater, green	Lasmigona subviridis	Yes
		060173	FSST	II	Pigtoe, Atlantic	Fusconaia masoni	
Bear Garden Creek (20802032)	ST	060081	ST	II	Floater, green	Lasmigona subviridis	Yes

Habitat Predicted for Terrestrial WAP Tier I & II Species

N/A

Public Holdings:

N/A

Compiled on 3/8/2016, 11:22:40 AM I713933.0 report=IPA searchType= R dist= 3218 poi= 37,42,41.8 -78,16,37.8

PixelSize=64; Anadromous=0.014717; BECAR=0.010497; Bats=0.010277; Buffer=0.09892; County=0.049738; Impediments=0.011725; Init=0.446481; PublicLands=0.019021; SppObs=0.12075; TEWaters=0.016046; TierReaches=0.028932; TierTerrestrial=0.034148; Total=0.909162; Tracking_BOVA=0.128021; Trout=0.01696

Molly Joseph Ward
Secretary of Natural Resources

Clyde E. Cristman
Director

COMMONWEALTH of VIRGINIA
DEPARTMENT OF CONSERVATION AND RECREATION

Rochelle Altholz
Deputy Director of Administration and Finance

David C. Dowling
Deputy Director of Soil and Water Conservation and Dam Safety

Thomas L. Smith
Deputy Director of Operations

April 5, 2016

Joanna Kimmel
EEE Consulting, Inc.
201 Church Street, Suite C
Blacksburg, VA 24060

Re: 16-041, Dominion Bremo Bluff Cell Tower

Dear Ms. Kimmel:

The Department of Conservation and Recreation's Division of Natural Heritage (DCR) has searched its Biotics Data System for occurrences of natural heritage resources from the area outlined on the submitted map. Natural heritage resources are defined as the habitat of rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geologic formations.

According to the information currently in our files, the James River – Bremo Stream Conservation Unit (SCU) is within two miles of the project site. SCUs identify stream reaches that contain aquatic natural heritage resources, including 2 miles upstream and 1 mile downstream of documented occurrences, and all tributaries within this reach. SCUs are also given a biodiversity significance ranking based on the rarity, quality, and number of element occurrences they contain. The James River – Bremo SCU has been given a biodiversity ranking of B4, which represents a site of moderate significance. Natural heritage resources associated with this site are:

Lasmigona subviridis	Green floater	G3/S2/NL/LT

The Green floater, a rare freshwater mussel, ranges from New York to North Carolina in the Atlantic Slope drainages, as well as the New and Kanawha River systems in Virginia and West Virginia (NatureServe, 2009). In Virginia, there are records from the New, Roanoke, Chowan, James, York, Rappahannock, and Potomac River drainages. Throughout its range, the Green floater appears to prefer the pools and eddies with gravel and sand bottoms of smaller rivers and creeks, smaller channels of large rivers (Ortman, 1919) or small to medium-sized streams (Riddick, 1973). Please note that this species has been listed as state threatened by the Virginia Department of Game and Inland Fisheries (VDGIF).

Furthermore, the Atlantic pigtoe (*Fusconaia masoni*, G2/S2/SOC/LT) and the Virginia pigtoe (*Lexingtonia subplana*, G1Q/SH/NL/NL) have been historically documented downstream of the project site. The Atlantic pigtoe is a medium-sized freshwater mussel which ranges from the Ogeeshee drainage in Georgia north to Virginia (NatureServe, 2009). In Virginia, this species is known from the James, Chowan and Roanoke River basins (NatureServe, 2009). The Atlantic pigtoe prefers clear, swift waters with gravel or sand and gravel substrates. Many populations from the main stem of larger rivers have disappeared and the species is becoming limited to the headwater areas of drainages in which it occurs. This could have implications for populations being able to reestablish after a localized, catastrophic event and for genetic exchange.

Threats to the Atlantic pigtoe include pollution, impoundments, clearcutting, and dredging (Gerberich, 1991). This species does not appear to be able to tolerate habitat changes and it appears to be very poor at recolonizing previously disturbed habitats (NatureServe, 2009). A recent study determined that the glochidia of the Atlantic pigtoe are extremely sensitive to pollution (Augspurger et al., 2003). Please note that this species is currently listed as threatened by the VDGIF and is also tracked as a species of concern by the United States Fish and Wildlife Service (USFWS); however, this designation has no official legal status.

The Virginia pigtoe is a state historic freshwater mussel. There are questions surrounding the Virginia pigtoe's taxonomic status, and its original description as a species may be based on partially-gravid Atlantic pigtoe (*Fusconaia masoni*). If it is a valid species, it is endemic to the James River drainage of Virginia (NatureServe, 2009).

Considered good indicators of the health of aquatic ecosystems, freshwater mussels are dependent on good water quality, good physical habitat conditions, and an environment that will support populations of host fish species (Williams et al., 1993). Because mussels are sedentary organisms, they are sensitive to water quality degradation related to increased sedimentation and pollution. They are also sensitive to habitat destruction through dam construction, channelization, and dredging, and the invasion of exotic mollusk species.

In addition, James River has been designated by the VDGIF as a "Threatened and Endangered Species Water" for the Brook floater, Atlantic pigtoe, and Green floater.

To minimize adverse impacts to the aquatic ecosystem as a result of the proposed activities, DCR recommends the implementation of and strict adherence to applicable state and local erosion and sediment control/storm water management laws and regulations. Due to the legal status of the Green floater, the Brook floater and the Atlantic pigtoe, DCR recommends coordination with Virginia's regulatory authority for the management and protection of this species, the VDGIF, to ensure compliance with the Virginia Endangered Species Act **(**VA ST §§ 29.1-563 – 570).

According to the USFWS Guidance dated September 14, 2000 "new construction of communication towers creates a potentially significant impact on migratory birds, especially some 350 species of night-migrating birds". "Communications towers are estimated to kill 4-5 million birds per year and some of these species affected are also protected under the Endangered Species Act and Bald and Golden Eagle Act" (USFWS, 2000). Therefore, DCR recommends voluntary implementation of USFWS interim guidelines for Communication Tower Siting, Construction, Operation, and Decommissioning (http://www.fws.gov/northeast/virginiafield/pdf/endspecies/Cell%20Towers/Cell%20Guidance.PDF).

Under a Memorandum of Agreement established between the Virginia Department of Agriculture and Consumer Services (VDACS) and the DCR, DCR represents VDACS in comments regarding potential impacts on state-listed threatened and endangered plant and insect species. The current activity will not affect any documented state-listed plants or insects.

There are no State Natural Area Preserves under DCR's jurisdiction in the project vicinity.

New and updated information is continually added to Biotics. Please re-submit a completed order form and project map for an update on this natural heritage information if the scope of the project changes and/or six months has passed before it is utilized.

A fee of $95.00 has been assessed for the service of providing this information. Please find enclosed an invoice for that amount. Please return one copy of the invoice along with your remittance made payable to the Treasurer of Virginia, Department of Conservation and Recreation, Division of Natural Heritage, 600 East Main Street, 24th Floor, Richmond, VA 23219. Payment is due within thirty days of the invoice date. Please note late payment may result in the suspension of project review service for future projects.

The VDGIF maintains a database of wildlife locations, including threatened and endangered species, trout streams, and anadromous fish waters that may contain information not documented in this letter. Their database may be accessed from http://vafwis.org/fwis/ or contact Ernie Aschenbach at 804-367-2733 or Ernie.Aschenbach@dgif.virginia.gov.

Should you have any questions or concerns, feel free to contact me at 804-371-2708. Thank you for the opportunity to comment on this project.

Sincerely,

S. René Hypes
Project Review Coordinator

CC: Troy Anderson, USFWS
Ernie Aschenbach, VDGIF

Literature Cited

Augspurger, T., A.E. Keller, M.C. Black, W.G. Cope, and F.J. Dwyer. 2003. Water quality guidance for protection of freshwater mussels (Unionidae) from ammonia exposure. Environmental Toxicology and Chemistry, 22: 2569-2575.

Gerberich, Andy. 1991. Atlantic pigtoe. In Virginia's Endangered Species: Proceedings of a Symposium. K. Terwilliger ed. The McDonald and Woodward Publishing Company, Blacksburg, Virginia.

NatureServe. 2009. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available http://www.natureserve.org/explorer. (Accessed: April 27, 2010).

Ortman, A.E. 1919. A monograph of the naiades of Pennsylvania, Part 3: Systematic account of the genera and species. Mem. Carnegie Mus. 8:1-384.

Riddick, M.B. 1973. Freshwater mussels of the Pamunkey River system, Virginia. M.S. Thesis, Virginia Commonwealth University, Richmond, VA 105pp.

U.S. Fish and Wildlife Service. 2000. Interim Guidelines for Recommendations on Communications Tower Siting, Construction, Operation, and Decommissioning.

Williams, J.D., M.L. Warren, Jr., K.S. Cummings, J.L. Harris, and R.J. Neves. 1993. Conservation status of freshwater mussels of the United States and Canada. Fisheries 18: 6-9.

Department of Conservation & Recreation
CONSERVING VIRGINIA'S NATURAL & RECREATIONAL RESOURCES

Web Project ID: WEB0000004865

Client Project Number: 16-041

PROJECT INFORMATION

TITLE: Dominion Bremo Bluff Tower

DESCRIPTION: Dominion proposes to construct a 390-foot self-supporting communications tower at the Bremo Power Station in Fluvanna County, Virginia. A 5' antenna will be placed on top of the tower, bringing the total height of the structure to 395'. The tower will replace an existing 335-foot guyed tower.

EXISTING SITE CONDITIONS: Utility

QUADRANGLES: Arvonia

COUNTIES: Fluvanna

Latitude/Longitude (DMS): 37°42'41.7814"N / 78°16'38.2140"W

Acreage: 0 acres

Comments:

REQUESTOR INFORMATION

Priority: N | Tier Level: Tier II | Tax ID:

Contact Name: Joanna Kimmel

Company Name: EEE Consulting, Inc.

Address: 201 Church Street, Suite C

City: Blacksburg | State: VA | Zip: 24060

Phone: (540) 953-0170 x304 Fax: (540) 953-0171 Email: jkimmel@eee-consulting.com

Conservation Site	Site Type	Brank	Acreage	Listed Species Presence
James River-Bremo SCU	SCU	B4	13	SL
	GLNHR	NA	0	NL
	GLNHR	NA	0	SL
	GLNHR	NA	0	NL

Natural Heritage Screening Features within Search Radius

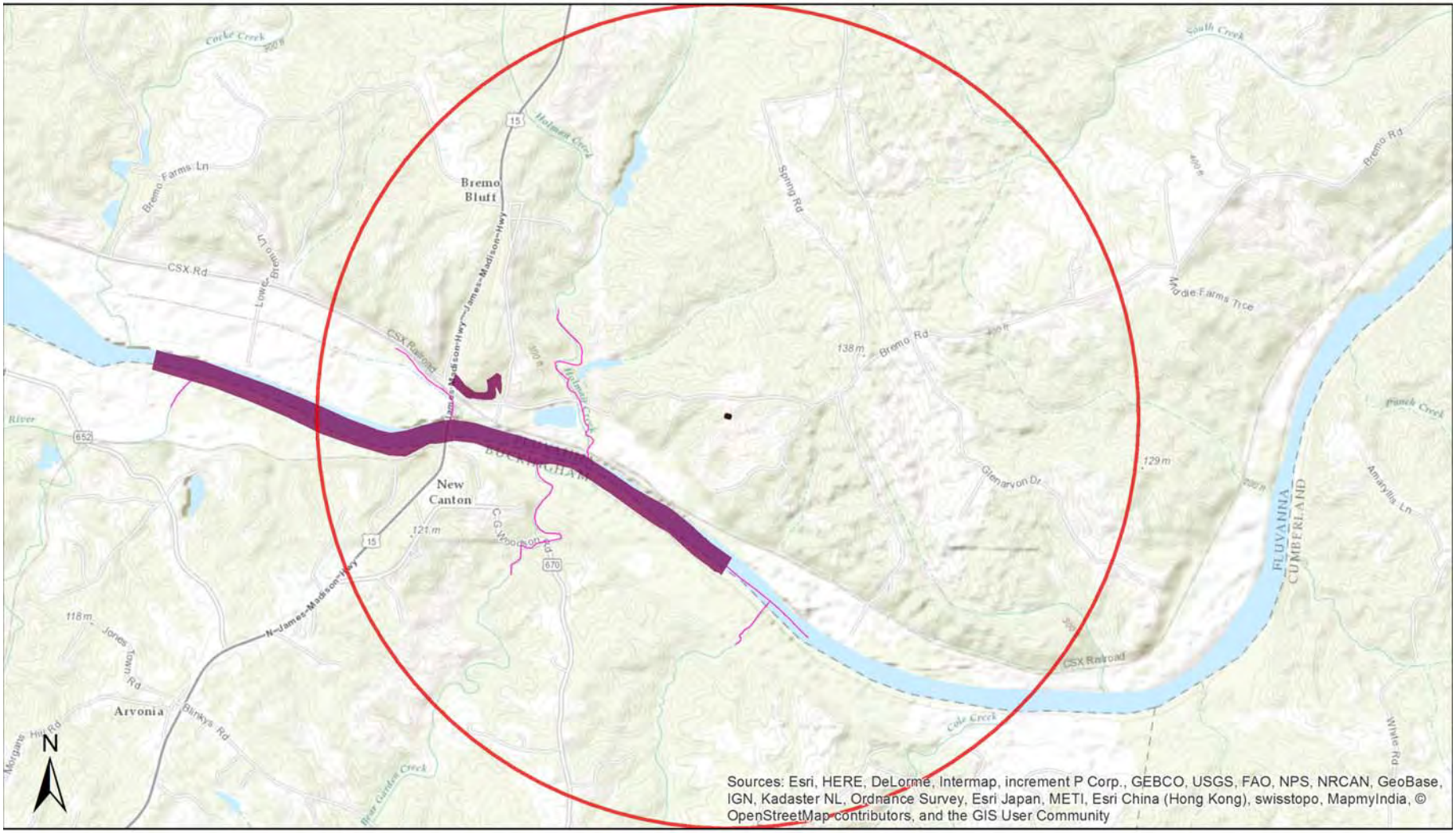
Site Name	Group Name	Common Name	Scientific Name	GRANK	SRANK	Fed Status	State Status	EO Rank	Last Obs Date	Precision
	Vascular Plant	Bradley's Spleenwort	Asplenium bradleyi	G4	S2			H	1970-03-14	
	Invertebrate Animal	Atlantic Pigtoe	Fusconaia masoni	G2	S2	SOC	LT	H	2007-12-11	
James River-Bremo SCU	Invertebrate Animal	Green Floater	Lasmigona subviridis	G3	S2		LT	E	2012-10-01	
	Invertebrate Animal	Virginia Pigtoe	Lexingtonia subplana	G1Q	SNR	SOC		H	1966-08-28	M

Natural Heritage Resources within Search Radius

Intersecting Predictive Models

Predictive Model Results

Dominion Bremo Bluff Tower



Project Area
Buffered
NH Screening Features
Conservation Site
GLNHR
SCU

1:51,624

0 0.425 0.85 1.7 mi

0 0.5 1 2 km

Quads: Arvonia

Counties: Fluvanna

Company: EEE Consulting, Inc.

Lat/Long: 374241 / -781638

COMMONWEALTH of VIRGINIA
DEPARTMENT OF CONSERVATION AND RECREATION

The project mapped as part of this report has been searched against the Department of Conservation and Recreation's Biotics Data System for occurrences of natural heritage resources from the area indicated for this project. Natural heritage resources are defined as the habitat of rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geologic formations.

According to the information currently in Biotics files, NATURAL HERITAGE RESOURCES HAVE BEEN DOCUMENTED within two miles of the indicated project boundaries and/or POTENTIAL HABITAT FOR NATURAL HERITAGE RESOURCES intersect the project area.

You have submitted this project to DCR for a more detailed review for potential impacts to natural heritage resources. DCR will review the submitted project to identify the specific natural heritage resources in the vicinity of the proposed project. Using the expertise of our biologists, DCR will evaluate whether your specific project is likely to impact these resources, and if so how. DCR's response will indicate whether any negative impacts are likely and, if so, make recommendations to avoid, minimize and/or mitigate these impacts. If the potential negative impacts are to species that are state- or federally-listed as threatened or endangered, DCR will also recommend coordination with the appropriate regulatory agencies: the Virginia Department of Game and Inland Fisheries for state-listed animals, the Virginia Department of Agriculture and Consumer Services for state-listed plants and insects, and the United States Fish and Wildlife Service for federally listed plants and animals. If your project is expected to have positive impacts we will report those to you with recommendations for enhancing these benefits.

There will be a charge for this service for "for profit companies": $60, plus an additional charge of $35 for 1-5 occurrences and $60 for 6 or more occurrences.

Please allow up to 30 days for a response, unless you requested a priority response (in 5 business days) at an additional surcharge of $500. An invoice will be provided with your response.

We will review the project based on the information you included in the Project Info submittal form, which is included in this report. Also any additional information including photographs, survey documents, etc. attached during the project submittal process and/or sent via email referencing the project title (from the first page of this report).

Thank you for submitting your project for review to the Virginia Natural Heritage Program through the NH Data Explorer. Should you have any questions or concerns about DCR, the Data Explorer, or this report, please contact the Natural Heritage Project Review Unit at 804-371-2708.

APPENDIX D – CULTURAL RESOURCES

Property Information

Property Names

Name Explanation	Name
Descriptive	Spring Garden Slave House

Property Addresses

Current - Route 656

County/Independent City(s): Fluvanna (County)
Incorporated Town(s): *No Data*
Zip Code(s): *No Data*
Magisterial District(s): *No Data*
Tax Parcel(s): *No Data*
USGS Quad(s): ARVONIA

Property Evaluation Status

Not Evaluated

Additional Property Information

Architecture Setting: *No Data*
Acreage: *No Data*
Site Description:

No Data

Surveyor Assessment:

No Data

Surveyor Recommendation: *No Data*

Primary Resource Information

Resource Category: Domestic
Resource Type: Slave/Servant Quarters
Date of Construction: 1800Ca
Historic Time Period: Early National Period (1790 - 1829)
Historic Context(s): Domestic
Architectural Style: Other
Form: *No Data*
Number of Stories: 1.0
Condition: *No Data*
Interior Plan: Two-Room, Single Pile
Threats to Resource: *No Data*
Architectural Description:

No Data

Exterior Components

Component	Component Type	Material	Material Treatment
Roof	Gable	Asphalt	Shingle
Windows	Sash, Double-Hung	Wood	4/4
Chimneys	Other	Brick	*No Data*
Structural System and Exterior Treatment	Frame	Wood	Weatherboard

Secondary Resource Information

Secondary Resource #1

Resource Category: *No Data*
Resource Type: *No Data*
Architectural Style: *No Data*
Form: *No Data*
Date of Construction: *No Data*
Condition: *No Data*
Threats to Resource: *No Data*
Architectural Description:
No Data

Historic District Information

Historic District Name: *No Data*
Local Historic District Name: *No Data*
Historic District Significance: *No Data*

CRM Events

Event Type: Survey:Phase I/Reconnaissance

Project Review File Number: *No Data*
Investigator: C., E. A. and A. C. W.
Organization/Company: Unknown (DSS)
Sponsoring Organization: *No Data*
Survey Date: 12/1/1984
Dhr Library Report Number: *No Data*
Project Staff/Notes:
No Data

Bibliographic Information

Bibliography:
No Data
Property Notes:
No Data
Project Bibliographic Information:
No Data

Virginia Dept. of Historic Resources

V-CRIS

Virginia Cultural Resource Information System

Legend

- Architecture Resources
- Architecture Labels
- Individual Historic District Properties
- Archaeological Resources
- Archaeology Labels
- USGS GIS Place names
- County Boundaries

Title: Architecture Labels

Date: 2/29/2016

DISCLAIMER:Records of the Virginia Department of Historic Resources (DHR) have been gathered over many years from a variety of sources and the representation depicted is a cumulative view of field observations over time and may not reflect current ground conditions.The map is for general information purposes and is not intended for engineering, legal or other site-specific uses. Map may contain errors and is provided "as-is". More information is available in the DHR Archives located at DHR's Richmond office.

Notice if AE sites:Locations of archaeological sites may be sensitive the National Historic Preservation Act (NHPA), and the Archaeological Resources Protection Act (ARPA) and Code of Virginia §2.2-3705.7 (10). Release of precise locations may threaten archaeological sites and historic resources.

Property Information

Property Names

Name Explanation	Name
Historic/Current	Spring Garden

Property Addresses

Current - Route 656

County/Independent City(s): Fluvanna (County)
Incorporated Town(s): *No Data*
Zip Code(s): *No Data*
Magisterial District(s): *No Data*
Tax Parcel(s): *No Data*
USGS Quad(s): ARVONIA

Property Evaluation Status

Not Evaluated

Additional Property Information

Architecture Setting: *No Data*
Acreage: *No Data*
Site Description:

No Data

Surveyor Assessment:

Example of 19th century dwelling with outbuildings.

Surveyor Recommendation: *No Data*

Primary Resource Information

Resource Category: Domestic
Resource Type: Single Dwelling
Date of Construction: 1800Ca
Historic Time Period: Early National Period (1790 - 1829)
Historic Context(s): Domestic
Architectural Style: *No Data*
Form: *No Data*
Number of Stories: 2.0
Condition: Good
Interior Plan: *No Data*
Threats to Resource: None Known
Architectural Description:

No Data

Exterior Components

Component	Component Type	Material	Material Treatment
Windows	Sash, Double-Hung	Wood	Other
Structural System and Exterior Treatment	Masonry	Brick	Other
Roof	Gable	*No Data*	Other
Chimneys	Interior	Brick	Cap, Corbeled
Porch	1-story, 3-bay	Wood	Other

Secondary Resource Information

Secondary Resource #1

Resource Category: Archaeology Site
Resource Type: Archaeological Site
Architectural Style: *No Data*
Form: *No Data*
Date of Construction: 1800
Condition: Good
Threats to Resource: None Known
Architectural Description:

Architecture Summary: Behind the house, aligned in a straight row parallel with the house facade, are the remians of three early outbuildings: a kitchen, smokehouse, and dairy. Onely a mid-nineteeth century step-shouldered chimney survives from the kitchen. It has a single firebox. The gable roofed smokehouse, has beaded siding, and is constructed with cut nails. The framing includes studs on two-foot centers and corner braces that rise to the same height. A rear window is a wire-nailed addition. The roofless dairy measure 12'2" square, has beading siding with hand-headed cut nails, and retains fragments of cyma-curnved vertical slats in front and rear ventilation grills. The small original window in the rer wall here is original.

Historic District Information

Historic District Name: *No Data*
Local Historic District Name: *No Data*
Historic District Significance: *No Data*

CRM Events

Event Type: Survey:Phase II/Intensive

Project Review File Number: *No Data*
Investigator: *No Data*
Organization/Company: Unknown (DSS)
Sponsoring Organization: *No Data*
Survey Date: *No Data*
Dhr Library Report Number: *No Data*
Project Staff/Notes:

No Data

Bibliographic Information

Bibliography:

No Data

Property Notes:

No Data

Project Bibliographic Information:

No Data

Virginia Dept. of Historic Resources

V-CRIS

Virginia Cultural Resource Information System

Legend

- Architecture Resources
- Architecture Labels
- Individual Historic District Properties
- Archaeological Resources
- Archaeology Labels
- USGS GIS Place names
- County Boundaries

Title: Architecture Labels

Date: 2/29/2016

DISCLAIMER:Records of the Virginia Department of Historic Resources (DHR) have been gathered over many years from a variety of sources and the representation depicted is a cumulative view of field observations over time and may not reflect current ground conditions.The map is for general information purposes and is not intended for engineering, legal or other site-specific uses. Map may contain errors and is provided "as-is". More information is available in the DHR Archives located at DHR's Richmond office.

Notice if AE sites:Locations of archaeological sites may be sensitive the National Historic Preservation Act (NHPA), and the Archaeological Resources Protection Act (ARPA) and Code of Virginia §2.2-3705.7 (10). Release of precise locations may threaten archaeological sites and historic resources.

Property Information

Property Names

Name Explanation	Name
Function/Location	VEPCO Power Plant, 1038 Bremo Rd
Historic	Virginia Electric and Power Company

Property Evaluation Status

DHR Staff: Potentially Eligible

Property Addresses

Alternate - Route 656
Current - 1038 Bremo Road

County/Independent City(s): Fluvanna (County)
Incorporated Town(s): *No Data*
Zip Code(s): *No Data*
Magisterial District(s): *No Data*
Tax Parcel(s): *No Data*
USGS Quad(s): ARVONIA

Additional Property Information

Architecture Setting: Rural
Acreage: *No Data*
Site Description:

1984: Overlooks the James River.

August 2011: The Virginia Electric and Power Company building is sited on a level lot and is adjacent to the railroad tracks and river. To the northwest is the Bremo Substation.

June 2012: The landscape in the vicinity of the Virginia Electric & Power Company Power Station consists of large areas of woodlands on a slightly undulating landscape. To the northwest of the Power Station is a modern ash pond utilized by the facility and to the southeast is open coal storage. The Power Station is sited adjacent to the James River as well as the current CSX, formerly the Chesapeake & Ohio, railroad tracks. A total of eight transmission lines within four ROW corridors stem from the Bremo Power Station.

1984: Northeast of the plant is a subsidiary brick building.

August 2011: An intake building is located to the southwest of the main power building.

June 2012: The intake building still remains.

Surveyor Assessment:

1984: VEPCO power plant should not be further investigated for register potential.

August 2011: The Virginia Electric and Power Company Building is a rare example of a large scale Art Deco power station and is recommended potentially eligible for listing on the NRHP under Criterion C for its architectural merit.

June 2012: Prior to the construction of the VEPCO power plant the land was owned by members of the Holman family. The first to own the property was George Holman who purchased the property prior to the mid-1860s. It appears Holman had financial difficulties and was forced to sell or auction the property as well as his livestock and several wagons. William Holman, a relative of George Holman, purchases a four horse wagon, carriage, and a yolk of oxen. The 398-acre parcel transfers ownership between P. J. Winn, Samuel B. Jones, and the Holmans until 1874 when William H. Holman purchased the property outright from the Jones's (Fluvanna County Deeds 20:243-244, 20:269-270, 20:280-281, 21:299-300).

William H. Holman was listed as a farmer in the 1880 census and his wife Lucy was keeping house. It appears that shortly after the census was taken, Lucy died. William later married Anna; however, by 1900 Anna was widowed and living with her five children, who ranged in age from 7 to 25. Anna was listed as head of the household and carried on the occupation of farmer after William's death. Anna retained ownership of the property until March of 1930 when she sold the parcel to Virginia Public Services Company (United States Federal Census 1880, 1900, and 1930; Fluvanna County Deeds 19:173-174).

Though the Virginia Electric & Power Company didn't purchase the property until 1930, the utility company, after several mergers, and the precursor of Dominion Power, formerly began in 1909 as the Virginia Railway and Power Company. The company provided electric streetcar service throughout the City of Richmond as well as provided early electricity and natural gas to residents. In 1925 the company merged with the Spotsylvania Company of Fredericksburg to form the Virginia Electric & Power Company (Dominion: 100 Years 2012; Will 1965:13-15).

The Virginia Electric & Power Company Power Station along the James River in Bremo Bluff was constructed in 1931 by the Electric Management and Engineering Company of New York, New York. The facility utilized state of the art technology of the era including two 3,600 rpm turbines; two vertical single pass boilers, the first of their kind to be utilized for electric power generation; and diphenyl oxide air heaters. All the systems and operations of the plant were monitored and regulated from a single centralized control room within the plant. The plant was operated on the unit principal allowing the boilers to operate individually. Each unit was equipped

with a pulverizing mill, turbine, coal burners, and associated fans and heaters as well as feed water systems including pumps and filters (Bremo Station 1931:2-3).

The design of the Bremo Power Station, unlike others built during the same time period, and what made Bremo unique, is the centralized control room, as previously mentioned. Traditionally the electrical bay of power stations constructed during the early twentieth century was connected to the turbine building and away from the boiler house. By using a centralized room which contained the controls for the electrical and steam systems as well as feed water heaters and other control systems between the turbine building and boiler house, operators could more easily monitor the operations of both sections of the plant. These control systems were state-of-the-art at the time and could precisely regulate all operations to maximize efficiency (Bremo Station 1931:11).

At the time of its construction the coal fired power plant produced 15,000 kw of power per turbine. Coal was delivered by railroad car to the power plant by the Chesapeake & Ohio Railroad, now CSX, whose tracks still run between the power plant and the James River. A spur off the main track serviced the complex for dispensing of coal as well as extended into the turbine building for the delivery of heavy machinery and other equipment (Greg Searcy, personal communication 4 June 2012). Historically the coal brought in by railcar was deposited into a large Bradford breaker to be processed for use within the building. The system was equipped with a bypass for coal fine enough to be directly used by the plant or for storage in a designated area. Coal was also staged throughout the property and was transported by a tail car which ran on a 400-foot radius track. A portion of the coal handling system was automated including a coal scale and feeder (Bremo Station 1931:5-6).

The design of the boilers and associated housing also differed at Bremo from the more conventional designs at the time. As the overall design of the plant was meant to be streamlined and more efficient, the layout of the boiler house was also simplified. The design chosen for the boilers was a single-pass vertical boiler, a design that does not utilize baffles. In 1931, at the time of the installation of the boilers, Bremo was the only plant in the country to incorporate this boiler design. In overcoming the expense of the extensive length of the ductwork and the loss of draft within the system, the use of a diphenyl oxide air heating system, another new innovation specific to Bremo, eliminated these issues, and provided a more efficient way to manage heat transfer through the system (Bremo Station 1931:7 and 10).

The steel turbines utilized in the Bremo Station, at its time of construction, were also an innovation and the first time this type of generation system was used. Each of the turbo-generators installed were 15,000 kw units and utilized automatic voltage regulators. Fans were placed at each end of the rotors for improved cooling and ventilation of the system. The system of tandem compound turbines provides for greater efficiency at variable loads by utilizing 15 stages at high pressure and eight stages at low pressure, could run on higher speeds, up to 3,600 rpm, as opposed to older turbines which reached a maximum of 1,800 rpm, and were the largest condensing turbines built in the country in 1930/31 (Bremo Station 1931:12).

It took a number of people to run the power plant; however, because of the innovations in technology utilized in its design, the plant could run with fewer employees as compared to most other plants of comparable size. In the 1940s the plant employed approximately 26 people from the surrounding area. Most lived along Route 15, Route 656, or Route 657. Occupations utilized by the power plant during this time period included plant operators, engineers, oilers, electric welders, mechanics, porters, and general help. Several plant superintendents and foremen were also hired to ensure the power station ran smoothly (United States Federal Census 1940).

To meet increased demand for power during the 1950s, resulting from population growth in the area, two additional units were added. Unit 3 was added in 1950 and Unit 4 in 1958. The unit's boilers were manufactured by Babcock and Wilcox and the turbine generators by Westinghouse Electric Corporation. In 1972 Units 1 and 2, the original turbines installed in the plant, were taken offline. The original stacks were removed in the 1980s (Greg Searcy, personal communication 4 June 2012). Large scale additions to the original power plant were constructed in the late twentieth century to meet the ever expanding demand for electricity in the region.

Currently the Bremo Bluff Power Station consumes 2,500 tons of coal daily to produce a net capacity of 227 megawatts of power which services an area of approximately 30,000 square miles. Presently two units generate power at the plant which employs approximately 75 people. To control emissions the station is equipped with low nitrogen oxide burners and electrostatic precipitators. The latter removes approximately 99 percent of the particles from the gases prior to venting from the large stacks (Bremo Power Station 2012).

The Virginia Electric & Power Company Power Station at 1038 Bremo Road, has been recommended as eligible for listing on the NRHP under Criteria A for engineering and industry for its use in new technological innovations incorporated into the design of the building as well as in the redesign of systems to create the most efficient use of energy and manpower in a manner not found in other power generating plants of the time period. The Power Station is also recommended as eligible for listing under Criteria C for its architectural merit as an excellent example of 1930s Art Deco industrial architecture.

Surveyor Recommendation: Legacy

Ownership

Ownership Category	Ownership Entity
Private	*No Data*

Primary Resource Information

Resource Category:	Industry/Processing/Extraction
Resource Type:	Power Plant
Date of Construction:	1930Ca
Historic Time Period:	World War I to World War II (1917 - 1945)
Historic Context(s):	Architecture/Community Planning, Industry/Processing/Extraction, Technology/Engineering
Architectural Style:	Art Deco
Form:	*No Data*

Number of Stories: *No Data*
Condition: Good
Interior Plan: *No Data*
Threats to Resource: Public Utility Expansion
Architectural Description:

Architecture Summary, 1984: The original part of the plant, built circa 1930, is constructed of brick and concrete in an industrial Art Deco style. Large sheet-metal sided addition to north, apparently constructed in the third quarter of the 20th century. Brick walls with concrete trim, flat roof.

August 2011: The building comprises two sections. The western portion of the building is a tall, one-story structure constructed with brick in a five-course American bond pattern with poured concrete foundation and parapet. The eastern section is a multi-story building also constructed of brick in a five-course American bond pattern. Windows include multi-pane metal fixed and awning style. A number of large modern additions have been constructed to the southeast and northeast sides of the building.

June 2012: The three buildings, as part of the initial 1931 construction of the Bremo Station, as it was historically known, remain largely intact. The exterior walls of the turbine building and the boiler house are brick in a five-course American bond pattern with a poured concrete foundation and parapet. Both sections of the building incorporate tall recessed metal, multi-light windows. Designed in an Art Deco style, the exterior exhibits a streamlined appearance with only limited areas of ornament such as the low relief stepped square design above the entry into Turbine Building and banded brickwork. A number of more modern additions behind the building have been constructed to accommodate the growing need for electricity during the mid-to late twentieth century.

The interior of the turbine building still retains its hoist cranes in the ceiling and portions of railroad tracks in the floor which brought in heavy machinery by rail along a spur. Extant on the interior walls are the original brown, dark green, and tan glazed tiles/bricks. A new concrete block wall now divides the space. The boiler house still contains both boilers including the original tan firebrick, although, not in operation, as well as the breaker room and control room, which was built with windows overlooking the boilers. The wiring in the control room; however, has been removed, but the stations remain.

Secondary Resource Information

Secondary Resource #1

Resource Category: Industry/Processing/Extraction
Resource Type: Energy Facility
Architectural Style: Art Deco
Form: *No Data*
Date of Construction: 1930
Condition: Good
Threats to Resource: Public Utility Expansion
Architectural Description:

Architecture Summary, 1984: Subsidiary brick building, circa 1930, built in the same style as the power plant.

August 2011: The intake building of the power plant is a one-story brick building in a five-course American bond pattern with a poured concreted foundation. Fenestration includes metal multi-light fixed and awning style windows.

June 2012: The one-story intake building, located to the southwest of the main building is also five-course American bond brick with poured concrete. The building was constructed with narrow metal windows which flank centered twelve-light metal windows with poured concrete sills. Along the southeastern side of the building is a high water line marker. The building was used to filter debris from the water pumped in from the river for cooling (Greg Searcy, personal communication 4 June 2012).

Historic District Information

Historic District Name: *No Data*
Local Historic District Name: *No Data*
Historic District Significance: *No Data*

CRM Events

Event Type: Survey:Phase II/Intensive

Project Review File Number: 2011-0693
Investigator: CRI
Organization/Company: Unknown (DSS)
Sponsoring Organization: *No Data*
Survey Date: 6/1/2012
Dhr Library Report Number: FV-022
Project Staff/Notes:

An Intensive Level Architectural Survey of the Bremo Power Station, Bremo Bluffs, Fluvanna County, Virginia

Surveyed by: Sandra DeChard
Architectural Description and Data Entry by: Sandra DeChard

Event Type: DHR Staff: Potentially Eligible

DHR ID: 032-0174
Staff Name: Kirchen, Roger
Event Date: 1/31/2012
Staff Comment

Potentially individually eligible, intensive level survey recommended, evaluate under Criteria A and C.

Event Type: Survey:Phase I/Reconnaissance

Project Review File Number: 2011-0693
Investigator: CRI
Organization/Company: Unknown (DSS)
Sponsoring Organization: *No Data*
Survey Date: 8/1/2011
Dhr Library Report Number: FV-022
Project Staff/Notes:

A Phase I Cultural Resources Survey of the Approximately 43.3-Mile Dominion Virginia Power Dooms to Bremo 230 kV Transmission Line, Fluvanna, Albemarle and Augusta Counties, Virginia.

Surveyed by: Emily Lindtveit
Architectural Description and Data Entry by: Sandra DeChard

Event Type: Survey:Phase I/Reconnaissance

Project Review File Number: *No Data*
Investigator: *No Data*
Organization/Company: Unknown (DSS)
Sponsoring Organization: *No Data*
Survey Date: 12/1/1984
Dhr Library Report Number: FV-022
Project Staff/Notes:

Surveyor initials only: EAC and WJM

Bibliographic Information

Bibliography:

No Data

Property Notes:

No Data

Project Bibliographic Information:

Name: CRI
DHR CRM Report Number: AB-171
Record Type: Report
Bibliographic Notes: Archaeological Survey of Six Potential Access Roads (Approximately 2.6 Linear Miles) along the Dominion Virginia Power 230 kV Transmission Line from the Transco Delivery Point to the Dooms Substation, Albemarle and Augusta County, Virginia. 2012

Name: CRI
Record Type: Report
Bibliographic Notes: An Intensive Level Architectural Survey of the Bremo Power Station, Bremo Bluffs, Fluvanna County, Virginia. June 2012.

Record Type: Census
Bibliographic Notes: United States Federal Census, 1880, 1900, 1910, 1920, 1930, and 1940.

Record Type: Article
Bibliographic Notes: Dominion Virginia Power
2009“Dominion: 100 Years and Going Strong.” 15 June 2012. <http://www.dom.com/about/anniversary.jsp>

Record Type: Deed
Bibliographic Notes: Fluvanna County Registry of Deeds and Probate, Circuit Court, Palmyra, VA

Record Type: Article
Bibliographic Notes: Dominion Power
2012“Bremo Power Station.” 15 June 2012. <http://www.dom.com/about/stations/fossil/bremo-power-station.jsp>

Record Type: Oral History/Interview
Bibliographic Notes: Greg Searcy, personal communication 4 June 2012

Name: CRI
DHR CRM Report Number: FV-022
Record Type: Report
Bibliographic Notes: Phase I Cultural Resource Survey of Approximately 12 Miles of the Dominion Virginia Power Bremo to Transco 230kV Transmission Line, Fluvanna County, VA. December 2011. DHR File No, 2011-0693; DEQ# 11-097S; SCC # PUE-2011-00039.

Virginia Dept. of Historic Resources

V-CRIS

Virginia Cultural Resource Information System

Legend

- Architecture Resources
- Architecture Labels
- Individual Historic District Properties
- Archaeological Resources
- Archaeology Labels
- USGS GIS Place names
- County Boundaries

N

Feet

0 50 100 150 200

1:2,500 / 1"=208 Feet

Title: Architecture Labels **Date: 2/29/2016**

DISCLAIMER:Records of the Virginia Department of Historic Resources (DHR) have been gathered over many years from a variety of sources and the representation depicted is a cumulative view of field observations over time and may not reflect current ground conditions.The map is for general information purposes and is not intended for engineering, legal or other site-specific uses. Map may contain errors and is provided "as-is". More information is available in the DHR Archives located at DHR's Richmond office.

Notice if AE sites:Locations of archaeological sites may be sensitive the National Historic Preservation Act (NHPA), and the Archaeological Resources Protection Act (ARPA) and Code of Virginia §2.2-3705.7 (10). Release of precise locations may threaten archaeological sites and historic resources.

APPENDIX E – FEMA MAP

3e EEE Consulting, Inc.
Environmental, Engineering and Educational Solutions

N

Prepared by ZAK, 4-28-16
Sources: 2013 VBMP Aerial Imagery; FEMA NFHL Flood database
Projection: NAD 1983 StatePlane Virginia North FIPS 4501 Feet

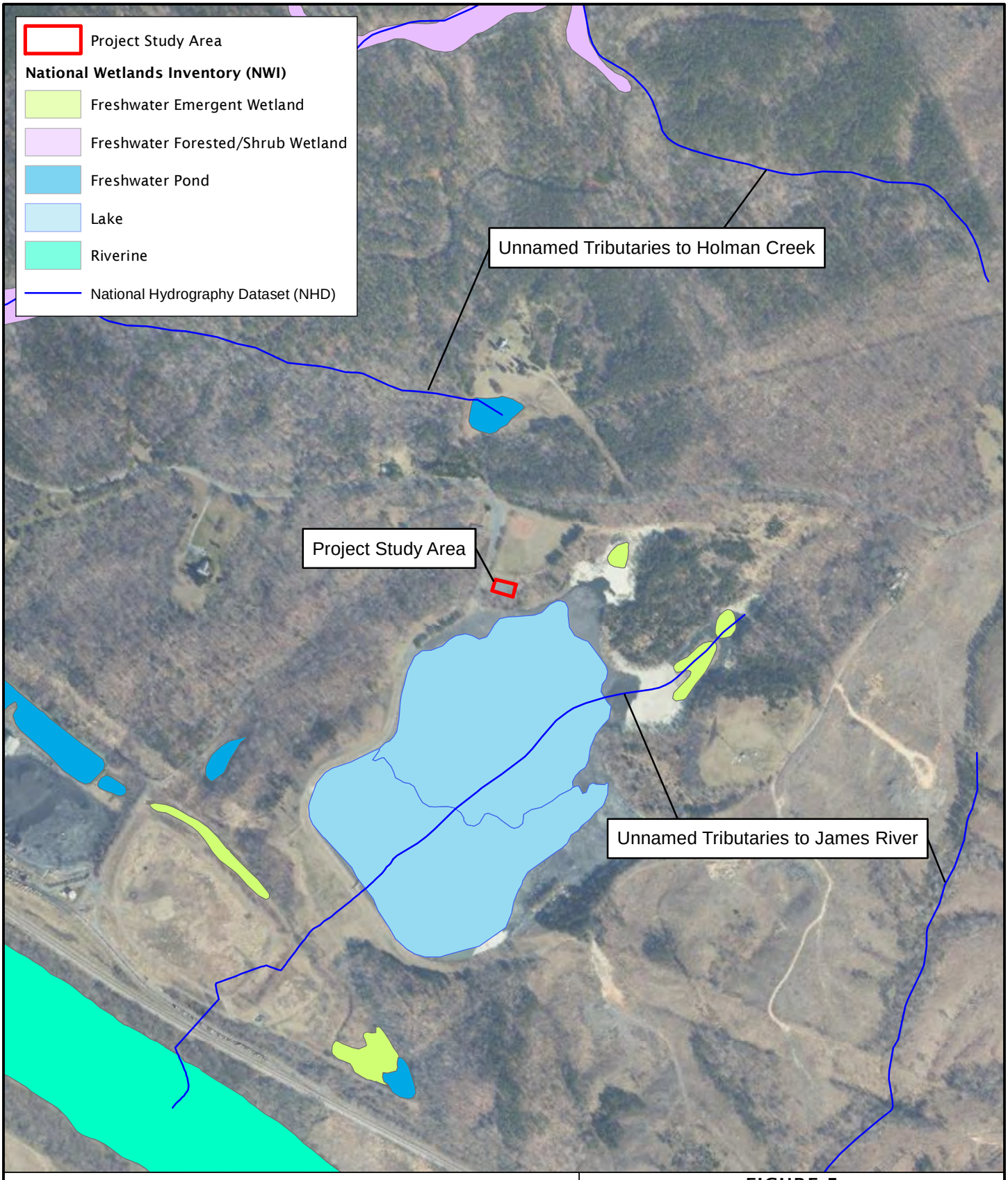
Proj# 16-041

FIGURE 4
FEMA FLOODPLAINS
BREMO BLUFF TOWER

0 1,000 2,000
Feet

Fluvanna County, VA

APPENDIX F – SURFACE FEATURES MAPS



3e EEE Consulting, Inc.
Environmental, Engineering and Educational Solutions

N

Prepared by ZAK, 4-28-16
Sources: 2013 VBMP Aerial Imagery; FWS NWI Database, National Hydrography Dataset
Projection: NAD 1983 StatePlane Virginia North FIPS 4501 Feet

Proj# 16-041

FIGURE 5
MAPPED WETLANDS AND SURFACE WATERS
BREMO BLUFF TOWER

0 670 1,340
Feet

Fluvanna County, VA